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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,343	04/15/2004	Masayuki Katakura	SON-2979	6330
23353	7590	07/05/2005	EXAMINER	
RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036			LE, DINH THANH	
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 07/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/824,343

Applicant(s)

MASAYUKI KATAKURA

Examiner

DINH T. LE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

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## **DETAILED ACTION**

### ***Specification***

The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim 1 is objected to because of the following informalities: "including" on line 19 should be corrected as --including--. Appropriate correction is required.

### ***Claim Rejections***

#### ***Claim Rejections - 35 USC § 112***

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Correction or clarification is required.

In claim 1, the recitation "the combination" 11 lacks clear antecedent basis. It is unclear what the "bit information" in the pulse signals on line 11 is, how the signals can have bit information, how the bit information and "the generated plurality of coefficients" can be "combined" and how the voltage level can be "changed" since no means for performing the combining function and changing function are recited in this claim, where the "coefficient series come from and can be "obtained".

In claim 3, the recitation "(n-1)" on line 7 is confusing because it is unclear if this is additional "(n-1)" or further recitation "(n-1)" on line 4 of claim 2. Also, the recitation "the result" on line 14 and "the maximum" on line 15 lacks clear antecedent basis. It is unclear how

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the bit change points can be “defined” on line 14 and how the equidistant points can be “sampled” since no means for performing the sampling function is recited in the claim. The same is true for claims 4-7.

The remaining claim 2 is dependent from the above claims and therefore also considered indefinite.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 are rejected under 35 USC 102 (b) as being anticipated by Shiro (JP361098003).

As the best construed, Shiro discloses in Figures 1-2 a signal generatin circuit comprising:

- a pulse generation circuit (SR) for generating a plurality of pulse signals using said clock signal as a reference (C); and
- a voltage output circuit having a plurality of coefficient generation circuits (S0-S4) for generating a plurality of different coefficients in response to the combination of bit information in said plurality of pulse signals and stepwisely changing the voltage level of said output (Vout) in response to a coefficient series obtained when further combining the generated plurality of coefficients; said plurality of coefficient generation circuits (S0-S4) provided in said voltage output circuit and generating said plurality of coefficients including odd number generation circuits (3) for generating odd number least ternary-values including coefficients on a positive side and coefficients on a negative side arranged symmetrically about a center coefficient, see Figure 2.

With regard to claim 2, the number of the coefficient generation circuits is  $n$  and  $(n-1)$  ternary-value generation circuits are included in the coefficient generation circuits.

With regard to claims 3 and 6-7, the recitation “one binary-value generation circuit” is read on the switch (S0) and  $(n-1)$  number of ternary-value generation circuits for repeatedly outputting a reference value and values at the positive side and values at the negative side from the reference value under the control of said pulse signals, and wherein bit change points of the plurality of pulse signals output from said pulse generation circuit are defined so that the result of sampling at  $2n$  number of equidistant points not including the maximum value, minimum value, and center point between them in a half cycle period from one of the maximum value and minimum value of the sine wave passing through the voltage change points of the pseudo sine wave to the other becomes said pseudo sine wave, see Figure 2.

With regard to claim 4-5, wherein said plurality of coefficient generation circuits have  $n$  number of ternary-value generation circuits repeatedly outputting a reference value and values at the positive side and values at the negative side from the reference value under the control of said pulse signals, and bit change points of the plurality of pulse signals output from said pulse generation circuit are defined so that the result of sampling at  $2n$  number of equidistant points including the maximum value or minimum value and a center point between them in a half cycle period from one of the maximum value and minimum value of the sine wave passing through the voltage change points of the pseudo sine wave.

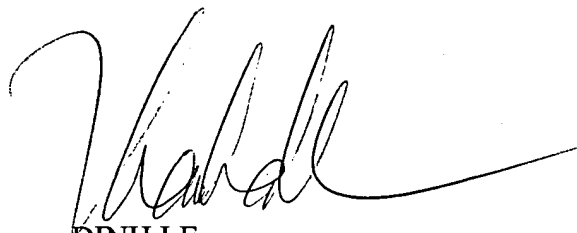
### ***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to DINH T. LE whose telephone number is (571) 272-1745. The examiner can normally be reached on Monday-Friday (8AM-7PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIMOTHY CALLAHAN can be reached at (571) 272-1740.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Dinh Le', with a long horizontal flourish extending to the right.

DINH LE  
Primary Examiner